"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

USSR

UDC: 8.74

NIKITENKO, M. N.

"A Program for Realizing a Dynamic Intersectoral Model of the National Economy (in the ALGOL-BESM Language)"

V sb. Algoritmy i programmy realizatsii narodnokhoz. modeley (Algorithms and Programs for Realization of National Economic Models--collection of works), Novosibirsk, 1971, pp 75-92 (from RZh-Kibernetika, No 5, May 72, Abstract No 5V527)

[No abstract]

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

USSR UDC:621.791.052:539.4:669.15-194.55

SMIRNOV, S. A., Engineer, NIKITENKO, V. A., Engineer, and IVANOV, N. S., Engineer

"Increasing the Properties of Martensite-Class Steel Welded Joints by Dynamic Deformation"

Moscow, Svarochnoye Proizvodstvo, No. 10, Oct 70, pp. 31-32

Abstract: Investigations were made of welded joints of high-strength martensite steel produced by electric slag welding with a plate electrode and subjected to 25-50% plastic deformation after welding. The use of dynamic deformation of welded joints of martensitic steel produced by electric slag welding using a plate electrodo allows a significant improvement in seam structure and in the zone around the seam and an increase in plastic properties of the welded joint.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

UNCLASSIFIED PROCESSING DATE--13NOV70

1/2 041

TITLE--DISLOCATING STRUCTURE AND OPTICAL HETEROGENEITIES OF YTTRIUM ALUMINUM GARNET SINGLE CRYSTALS -U-

AUTHOR-(05)-DEDUKH, L.M., ZHIZHEYKO, I.A., BAGDASAROV, KH.S., KEVORKOV, A.M., NIKITENKO, V.I.

COUNTRY OF INFO--USSR

SOURCE--KRISTALLOGRAFIYA 1970, 15(2), 334-41

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, EARTH SCIENCES AND OCEANOGRAPHY, PHYSICS

TOPIC TAGS--GARNET, SINGLE CRYSTAL, CRYSTAL DISLOCATION, YTTRIUM COMPOUND, LASER PROPERTY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1570 STEP NO--UR/0070/70/015/002/0334/0341

CIRC ACCESSION NO--AP0125196

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

2/2 041 UNCLASSIFIED PROCESSING DATE--13NOV70

CIRC ACCESSION NO--AP0125196

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DISLOCATIONS WERE OBSD. BY MEANS OF AN OPTICAL POLARIZATION STUDY OF THE BIREFRINGENCE RELATED TO SINGLE DISLOCATIONS IN ND PRIME3 POSITIVE DOPED Y SUB3 AL SUB5 O SUB12 SINGLE CRYSTALS. THE INFLUENCE OF DISLOCATIONS OF THE LASER CHARACTERISTICS OF THE CRYSTAL IS DISCUSSED, AND A FURTHER STUDY OF OPTICAL INHOMOGENEITIES IS PRESENTED. FACILITY: INST. KRISTALLOG., MOSCOW, USSR.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

USSR

DEDUKH, L. M., NIKITENKO, V. I.

"Investigation of Dislocations and Their Influence on the Processes of Magnetization of Iron-Yttrium Garnet Monocrystals"

Izvestiya Akademii Nauk SSSR, Seriya Fizicheskaya, Vol 34, No 6, 1970, pp 1,235-1,239

Abstract: A study is made of the dislocation structure of iron-yttrium garnet monocrystals, grown from a solution in a fusion by means of the polarization-optical method. The positions of the dislocation lines, the sliding surfaces, and the Burgers vectors are determined. The interaction of individual dislocations with the domain structure of the crystal during its magnetization in weak magnetic fields was studied direction, and the data obtained are analyzed on the basis of consideration of the magnetoelastic interaction between the dislocation-stress field and the magnetization on the domain boundaries.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

USSR

UDC 620.10

NIKITENKO, V. I., Engineer, and SOKOLOV, V. F., Candidate of Technical Sciences

"A Numerical Method for Calculating the Natural and Forced Oscillations of Composite Shell Structures"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy--Mashinostroyeniye, No 10, 1973, pp 14-19

Abstract: A procedure has been worked out for numerical determination of the natural frequencies and the vibrational modes, as well as the forced motions of thin-walled shells of arbitrary shape and composite structures. The solution is an approximate one, and is based upon expansion of the determinant of a matrix equation with respect to the curvature along the generatrix into a series in terms of the powers of a small parameter. The principal advantage of the obtained solution is the absence of a single-valued relation between the number of finite elements of the calculation scheme and the number of degrees of freedom of a continuous system that are taken into account. 3 figures. 4 references.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

USSR

UDC: 681.325.5

TIMOFEYEV, B. B., SUKHOMLINOV, M. M., FERENETS, N. K., STEPKO, D. P., NIKITENKO, V. M., OVERKO, V. A., PRSHISOVSKAYA, T. A., LYFAR', I. N.

"A Specialized Digital Computer"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 47, Dec 73, Author's Certificate No 408304, Division G, filed 23 Jun 70, published 10 Dec 73, p 172

Translation: This Author's Certificate introduces a specialized digital computer which contains registers, counters, and a control module connected to the registers and to the overflow outputs of the counters. The device also contains adders, flip-flops, an auxiliary code formation module, coincidence gates, buffer circuits, and a cadence pulse circuit connected to the input of a circuit for obtaining digit potentials. The outputs of this circuit are connected to the inputs of the control module. As a distinguishing feature of the patent, the functional possibilities of the computer are extended by adding a circuit for isolating transition signals, a transition counter, and three auxiliary registers. The output of the transition counter is connected to the first input of the first adder,

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

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TIMOFEYEV, B. B., et al., USSR Author's Certificate No 408304

whose output is connected to the input of the transition counter. The output of the first auxiliary register is connected to its input through the first coincidence gate, while the outputs of the second and third registers are connected through the second and third coincidence gates to the first inputs of the second and third adders whose outputs are connected to the inputs of the second and third registers respectively. The output of the second adder is connected through the fourth coincidence gate to the first input of the first buffer circuit. The second input of this buffer circuit is connected to the output of the first register, and the output of the buffer circuit is connected to the first input of the circuit for isolating transition signals. The second input of this circuit is connected to the output of the transition counter and, through the fifth and sixth coincidence gates, to the first inputs of the second and third buffer circuits. The outputs of these buffer circuits are connected to the second and third inputs, whose outputs are connected to the second inputs of the second and third adders respectively. The output of the circuits for isolating transition signals is connected through the seventh and eighth coincidence gates to the second inputs of the second and third buffer circuits respectively and, through the ninth coincidence gate,

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

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TIMOFEYEV, B. B., et al., USSR Author's Certificate No 408304

to the input of the auxiliary code formation module whose output is connected to the third input of the second buffer circuit. The output of the third register is connected through the tenth coincidence gate to the set input of the flip-flop whose output is connected through the eleventh coincidence gate to the second input of the first adder.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

USSR

UDC: 669.713

NIKITICH, V.T., and SOLNTSEV, S.S.

"First Scientific and Technical Conference at the Bratsk Aluminum Plant"

Moscow, Tsvetnyye Metally, No 5, May 70, pp 93-94

Abstract: In November 1969, the first scientific-technical conference on accomplishments and suggestions for further improvement of technical and economic indicators of series-type electrolysis units, equipped with high-capacity electrolyzers with top current feed, was held at the Bratsk Aluminum Plant. Representatives from the Bratsk, Krasnoyarsk, Novokuznetsk, Irkutsk, and Volgograd aluminum plants, the Bratsk assembly administration of the Stroymontazh trust, VAMI (All-Union Institute of Aluminum and Magnesium), the Sverdlovsk Institute of Labor Hygiene and Occupational Diseases, and the Proyektstal'konstruktsiya, NIIZhB (Scientific Research Institute of Concrete and Reinforced Concrete), and Tsvetmetavtomatika institute were present at the conference. Twenty-five reports were presented. Various suggestions were offered on the improvement of electrolytic processes, both in the field of research and in the modification of existing techniques and equipment. These included suggestions on automatic regulation of anode arrangement, intensification and expansion of research on the improvement of anode-mass quality, acceleration of the development and adoption of the means of mechanization, continuous plant supply with the necessary raw materials and equipment, decrease

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

USSR

NIKITICH, V.T., Tsvetnyye Metally, No 5, May 70, pp 93-94

of the negative effect of magnetic fields through rational arrangement of ferromagnetic parts, increase of the distance between anode and border by use of graphitized slabs, and intensification and expansion of research on the effect of magnetic and gas hydrodynamics of the melt, its temperature, and concentration fields, and geometric parameters on indicators of the electrolysis process.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

1/2 021 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--RADIANT INTENSITY OF FILAMENT LAMPS -U-

AUTHOR-(03)-SMOLKIN, M.I., SUVOROVA, N.N., NIKITICHEVA, A.M.

COUNTRY OF INFO--USSR

SOURCE--SVETOTEKHNIKA (USSR), NO. 1, P. 16-17 (JAN. 1970)

DATE PUBLISHED----JAN70

SUBJECT AREAS--PHYSICS, ELECTRONICS AND ELECTRICAL ENGR., MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--VISIBLE LIGHT RADIATION, RADIATION INTENSITY, SPECTRAL, DISTRIBUTION, COLOR, ELECTRON TUBE FILAMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3004/0129 STEP NO--UR/0311/70/000/001/0016/0017

CIRC ACCESSION NO--AP0130891

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

2/2 021 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0130891

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PAPER PROVIDES A METHOD, BASED PARTLY ON CALCULATIONS AND PARTLY ON MEASUREMENT, OF DETERMINATION OF THE RADIANT INTENSITY AND ITS SPECTRAL DISTRIBUTION OF LIGHT AND COLOUR TEMPERATURE FOR A GIVEN TEMPERATURE OF THE SOURCE. CURVES ARE GIVEN SHOWING SPECTRAL DISTRIBUTION OF RADIANT INTENSITY OF IODINE LAMP AND THE DEPENDENCE OF LIGHT INTENSITY, RADIANT INTENSITY OF THE BULB AND THE FILAMENT ON THE POWER AND COLOUR TEMPERATURE. THE RESULTS OF THE MEASUREMENT SHOW RADIANT INTENSITIES OF A WHOLE SERIES OF LAMPS RATED 25-1500 W AND ARE IN CLOSE AGREEMENT WITH THE CALCULATED RESULTS.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

USSR

UDC 536.4.015:669.018.2

TRAVINA, N. T., TYAPKIN, YU. D., NIKITIN, A. A., and KOZLOV, V. P., Institute of Metal Science and Physics of Metals, Central Scientific Research Institute of Ferrous Metallurgy imeni I. P. Bardin

"The Influence on Mechanical Properties of the Spatial Distribution of Second-Phase Separations in Nickel-Base Aging Alloys "

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 36, No 4, Oct 73, pp 803-807

Abstract: A study was made of the effect of spatial distribution of second-phase separations on the characteristics of strength and plasticity of single crystals of aging alloys of the following compositions: Ni - 14.0 at%Al, Ni - 16.5 at%Al, and Ni - 19.0 at%Al. From the stress-strain diagram plotted from tensile tests of flat specimens made at a rate of $2.5 \cdot 10^{-3}$ sec^{-1} calculations were made of the curves "reduced shear stress τ_i - reduced shearing strain γ_i " for the $\{111\} \langle 110 \rangle$ slip system. The measured mechanical characteristics (critical shearing stress τ_s, strain hardening factor θ_{II}, maximum shearing strain γ_m) are compared with parameters η which characterize the correctness of the spatial distribution of γ'-phase particles. It was found that the plasticity of the investigated alloys improves with growing η, not only without decrease in strength, but even at some increase in strength. The importance, from the viewpoint of practical use, of the effect of the 1/2

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

USSR

TRAVINA, N. T., et al., Fizika Metallov i Metallovedeniye, Vol 36, No 4, Oct 73, pp 803-807

correct spatial distribution of 2nd phase particles for the improvement of the plasticity of alloys at simultaneous increase in strength is emphasized. Two figures, one table, nine bibliographic references.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

USSR

UDC 621.371.029.4

ZABAVINA, I. N., NIKITIN, A. A., and ORLOV, A. B.

"Measuring Phase Velocities in the Ultra-Long Wave Range Using Radio Relay Communication Lines"

Moscow, V sb. X Vses. konf. po rasprostr. radiovoln. Tezisy dokl. Sekts. 1 (Tenth All-Union Conference on the Propagation of Radio Waves; Report Theses; Section 1--collection of works) "Nauka," 1972 pp 235-239 (from RZh--Radiotekhnika, No 10, 1972, Abstract No 10A324)

Translation: Results of measuring the phase velocities in the ultra-long wave range using a system of dispersed points interconnected by radio relay lines are discussed. The instrument error in determining v/c in the 10-14 kHz range did not exceed $(3-5)\cdot10^{-4}$. Bibliography of 12. A. L.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

USSR

UDC 539.37:539.412

TRAVINA, N. T., and NIKITIN, A. A., Institute of Metal Studies and Physics of Metals; Central Scientific Research Institute of Ferrous Metallurgy imeni I. P. Bardin

"Deformation of Single Crystals of Nickel-Aluminum Solid Solutions. 1. Temperature and Concentrational Dependences of Critical Shearing Stresses"

Sverdlovsk. Fizika Metallov i Metallovedeniye, Vol 31, No 6, Jun 71, pp 1267—1271

Abstract : The effects of aluminum concentration, investigation temperature, and orientation of the axis of stretching of specimens of solid solutions of Ni - Al with 4.0 and 8.0 at. wt. % of Al on the values of critical shearing stresses and the characteristics of strain hardening of monocrystals were investigated in the temperature interval of -196 to +400 oC . The physical nature of obstacles hindering the motion of dislocations is discussed. Derived experimental data are analyzed by reference to diagrams and in conformity with modern dislocation theories. The analysis shows that activation energies and activation volumes of the solid solution of Ni - Al with 8.0 at. wt. % of Al actually can be combined with processes of developing steps on dislocations. Three illustr., one table, 11 biblio. refs.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

USSR

UDC 539.37:539.412

TRAVINA, N. T., and NIKITIN, A. A., Institute of Metal Studies and Physics of Metals; Central Scientific Research Institute of Ferrous Metallurgy imeni I. P. Bardin

"Deformation of Single Crystals of Nickel-Aluminum Solid Solutions. 2. Strain Hardening"

Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 31, No 6, Jun 71, pp 1272 –1280

Abstract: In continuation of the first part of this article (Ibid., Vol 31, No 6, Jun 71, pp 1267 –1271) on the effect of the concentration of the alloying component, the orientation of the axis of stretching, and the temperature of investigations on the character of critical shearing stresses, the effects of these factors on the character of the stress-strain curves and the characteristics of strain hardening of solid solutions of Ni - Al with 4.0 and 8.0 at. wt. % of Al were investigated. The character of the stress-strain curves of monocrystalline solid solutions is generally analogous to curves of pure metals with face-centered cubic lattice, showing the three stages of light sliding, linear hardening, and dynamic rest. However, the presence of the alloying

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USSR

TRAVINA, N. T., et al, Sverdlovsk, Fizika Metallov i Metallovedeniye, Vol 31, No 6, Jun 71, pp 1272-1280

element substantially affects the extent of these stages and their characterizing strain hardening factors. Experimentally derived strain hardening characteristics of Ni - Al solid solutions with 4 and 8 at. wt. % of Al tested at various temperatures and the changing lengths of tested specimens and the shearing stresses during deformation are discussed by reference to tabulated data and strain hardening curves. Six illustr., three tables, 14 biblio. refs.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

1/2 014 UNCLASSIFIED PROCESSING DATE--02OCT70

TITLE--THEORY OF CONCENTRATION POLARIZATION OF AMALGAM ELECTRODES -U-

AUTHOR-(02)-KOZIN, L.F., NIKITIN, A.A.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK KAZ. SSR, SER. KHIM. 1970, 20(1), 36-49

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, ELECTRONICS AND ELECTRICAL ENGR.

TOPIC TAGS--AMALGAM, ELECTRODE POLARIZATION, ELECTRODE POTENTIAL, CURRENT DENSITY, ELECTROLYTIC CELL, SOLUTION CONCENTRATION, THALLIUM COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1987/0858 STEP NO--UR/0360/70/020/001/0036/0049

CIRC ACCESSION NO--AP0104294

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

2/2 014 UNCLASSIFIED PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0104294

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. EQUATIONS ARE DERIVED FOR THE DISCHARGE IONIZATION REACTION OF METALS ON HG AND AMALGAM ELECTRODES. THESE REACTIONS ARE USUALLY ACCOMPANIED BY ONLY CONCN. POLARIZATION, IF THE ACTIVITY OF THE METAL ATOMS IN THE NEAR ELECTRODE LAYER OF THE AMALGAM IS VARIABLE, THEN THE USUALLY LINEAR RELATION OF THE ELECTRODE POTENTIAL VS. LOG (1 MINUS (I-I SUBD)), WHERE I IS THE CURRENT PASSING THROUGH THE NEAR ELECTRODE LAYER AND I SUBD IS THE LIMITING CURRENT, IS NOT OBSERVED. THE RELATIONSHIP BETWEEN THE POTENTIAL AND THE ATOM FRACTION TL (N SUB1) IN A TL AMALGAM ELECTRODE WAS STUDIED AT 25, 50, AND 75DEGREES. AT N SUB1 EQUALS 10 PRIME NEGATIVE5 TO 10 PRIME NEGATIVE2, THE AMALGAM POTENTIAL WAS 65 MV. AS N SUB1 INCREASED THE POTENTIAL GRADUALLY DECREASED AND FOR THE COMPN. TL SUB2 HG SUB5 IT WAS ONLY 0.4 MV.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

USSR

UDC 621.365.82

IGOShIN, V. I., KULIKOV, L. V., NIKITIN, A. I.

"Measuring the Velocity Constant of Chemical Reactions of Atomic Fluorine with Hydrogen and Deuterium by Laser Methods"

Kratkiye soobshch. po fiz. (Brief Communications on Physics), No 1, 1973, pp 3-9, RZh-Fizika, No 9, Sep 73, Abstract No 9D819

Translation: The shape of the oscillatory pulse of a chemical laser was used to measure the velocity constant of the reaction of atomic fluorine with hydrogen and deuterium. The chemical laser worked on a mixture of NS_3 and H_2 or D_2 and was triggered by an electrical pulse of 1 microsecond's duration at an emf of 60 kilovolts with energy up to one joule. A numerical calculation of the laser kinetics is given, and the conditions under which the primary contribution to excitation of the oscillatory levels of HF(BF) is due to the reaction of atomic fluorine with hydrogen (deuterium) are determined. The measured values of the velocity constant are in good agreement with the known values.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

USSR

DOVGOPOLYY, V. G., KALAYDA, Ye. I., KONOZENKO, V. I., MASHBITS, G. Ya., NIKITIN, A. I.

UDC: 8.74

"Principles of Adjusting an Operational System for a Variable Set of Equipment, and the Number of Solvable Problems"

Kiev, Konstruirovaniye i vnedreniye novykh sredstv vychisl. tekhn.--sbornik (Designing and Introducing New Computer Facilities--collection of works), t. 1, 1971, pp 91-94 (from RZh-Kibernetika, No 7, Jul 73, abstract No 7V639)

Translation: Rapid and effective alignment of an operational system for a certain set of equipment and the necessary number of problems to be handled is one of the most urgent and most complicated problems of systems programming. This paper describes methods of solving some aspects of this problem; these procedures have been used in developing an operational system for the "Dnepr-2" computer. An operational system of modular structure was used as the basis of these methods (see Ye. I. Kalayda, V. I. Konozenko, G. Ya. Mashbits, A. I. Nikitin, "Konstruirovaniye i vnedreniye novykh sredstv vychisl. tekhn.", t. 1, pp 94-96).

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USSR

KALAYDA, Ye. I., KONOZENKO, V. I., MASHBITS, G. Ya., NIKITIN, A. I.

"Some Problems of Systems Programming Arising with Modular Organization of an Operational System"

Konstruirovaniye i vnedreniye novykh sredstv vychisl. tekhn. T. 1 [Design and Introduction of New Computer Equipment. Volume 1 -- Collection of Works], Kiev, 1971, pp 94-98 (Translated from Referativnyy Zhurnal - Kibernetika, No 8, 1973, Abstract No 8 V639 by V. Ostrovskiy)

Translation: Certain methods of systems programming used by the authors in the development of the DD-3 operational system for the Dnepr-2 computer are presented. Attention is drawn to the fact that the success of development of an OS depends to a great extent on making of the proper decisions in such problem areas as: efficient organization of the program; revision of system expandability; special approaches for combined debugging; methods for automatic OS generation. The authors feel that the key to the solution of these problems lies in modular organization of the system. In this connection, a general description of the structure and process of functioning of standard modules used in the development of DD-3 is presented.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

USSR

KALAYDA, Ye. I., KONOZENKO, V. I., MASHBITS, G. Ya., NIKITIN, A. I.
Konstrunrovaniye i vnedreniye novykh sredstv vychisl. tekhn. T. 1, Kiev, 1971, pp 94-98

The modular organization of the OS allowed a mean productivity of 8 to 10 instructions per day per programmer to be achieved in the period of writing and debugging of the main portion of DD-3 (approximately 10,000 instructions), and is recommended by the authors for use in developing of large programming systems for computers.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

USSR

NIKITIN, A. I., SHESTAKOV, S. A.

"Influence of Dispatcher Time on Characteristics of an Operational System with Priority Servicing Discipline"

Upravlyayushchiye Sistemy i Mashiny [Control Systems and Machines], 1972, No 1, pp 86-90 (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V684, by the authors).

Translation: The influence of the time necessary for switching from one program branch of a control computer to another with higher priority on the main characteristics of the servicing discipline with absolute priority of requests is studied.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

USSR

GLUSHKOV, V. M., NIKITIN, A. I., RABINOVICH, Z. L.

"Some Trends in the Development of Structures and Software of Digital Computers"

Upravlyayushchiye Sistemy i Mashiny [Control Systems and Machines], 1972, No 1, pp 79-85 (Translated from Referativnyy Zhurnal Kibernetika, No 6, 1973, Abstract No 6V594, by the authors).

Translation: Certain trends in the development of the structures and software of digital computers related to the possibility of creation of multiprocessor machines on the basis of new hardware and also to the necessity of supporting their functioning in the collective use mode for the solution of various types of problems are studied.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7"

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USSR

BASOV, N. G., ZAVOROTNYY, S. I., MARKIN, YE. P., NIKITIN, A. I., and ORAYEVSKIY, A. N., Physics Institute imeni P. N. Lebedev, Academy of Sciences USSR

"High-Pressure, Pulsed Chemical Laser Using a $D_2+F_2+CO_2$ Mixture"

Moscow, Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 15, No 3, 5 Feb 72, pp 135-137

Abstract: The idea of obtaining an inverted population by energy transfer from "hot" molecules obtained during a chemical reaction to "cold" molecules was first suggested by the authors with application to chemical lasers. The method of introducing a polyatomic CO_2 molecule into a D_2+F_2 mixture enabled the authors to increase the chemical efficiency and output energy of a pulsed chemical laser approximately 10-fold, and the successful completion of experiments with the mixture at low pressures made it possible for them to undertake experiments at higher reactant pressures. The introduction of CO_2 molecules made it possible to put together a working mixture in which the partial pressures of deuterium and commercially pure fluorine exceeded the

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BASOV, N. G., et al., Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 15, No 3, 5 Feb 72, pp 135-137

second chain flammability limit of a pure stoichiometric D_2+F_2 mixture. The typical partial pressure ratio of the principal components of the gas mixture -- fluorine, deuterium, carbon dioxide, and helium -- was 1:1 4:11 [sic] respectively, and the total pressure varied within several hundred torr. Experiments were staged in a stainless steel reactor vessel. Initiation of the reaction was effected by the radiation of a linear flash lamp with a brightness temperature of 20,000-25,000° K. It was found that the rate of formation of fluorine atoms during dissociation of fluorine molecules under the action of the radiation of the source being used is insufficient in most cases for the development of oscillation. Therefore, to improve reaction initiation conditions, a readily dissociating fluorine-containing component (molybdenum hexafluoride or other fluorine compound) was added to the mixture. The MoF_6 pressure (several torr) was chosen so that the characteristic chemical reaction time should be about 1-2 microseconds. On a wavelength of about 10.6 microns oscillation as a rule, appears 5 microseconds after the start of the light pulse and lasts 7-10 microseconds. Spikes lasting about 1 microsecond

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

BASOV, N. G., et al., Pis'ma v Zhurnal Eksperimental'noy i Teoreticheskoy Fiziki, Vol 15, No 3, 5 Feb 72, pp 135-137

are sometimes observed at the top of the pulse. The energy in the radiation pulse varies from 5 to 15 j according to the composition of the gas mixture.

The authors thank A. V. PANKRATOV, V. S. ZUYEV, V. L. TAL'ROZA, P. G. GRIGOR'YEV, L. V. KULAKOV, V. T. GALOCHKIN, V. V. GROMOV, B. L. BOROVICH, and G. K. VASIL'YEV for their assistance in the work.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

USSR

UDC: 681.327

BLAZHKO, S. S., ZASLAVSKIY, R. I., KALAYDA, Ye. I., MASHBITS, P. Ya., KUKHARCHUK, A. G., NIKITIN, A. I., Institute of Cybernetics of the Academy of Sciences of the UkrSSR, and Electronic Computer and Control Computer Plant

"A Device for Data Transmission From the Input Unit to the Memory in a Digital Computer"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 30, Oct 71, Author's Certificate No 317056, Division G, filed 27 Jun 69, published 7 Oct 71, p 172

Translation: This Author's Certificate introduces a device for data transmission from the input unit to the memory in a digital computer. The device contains a data address counter and a symbol register. As a distinguishing feature of the patent, program processing of words is simplified by including a balance circuit, a word symbol counter, a pattern address counter, an initial pattern address register, a space symbol decoder, and a zero decoder for the word symbol counter. The first output of the balance circuit is connected to the input of the data address counter, the second output is connected to the input of

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

USSR

BLAZHKO, S. S. et al, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 30, Oct 71

the word symbol counter, and the third output is connected to one input of the pattern address counter. Connected to the other input of the pattern address counter is the output of the initial pattern address register. The first input of the balance circuit is connected to the output of the space symbol decoder, whose input is connected to the output of the symbol register. The second input of the balance circuit is connected to the output of the word symbol counter, and the third input of the balance circuit is connected to the output of the zero decoder for the word symbol counter. The zero decoder input is connected to the output of the word symbol counter.

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

NIKITIN, A. I.

JPRS 55067
29 May 72

UDC: 611-013.16-085.2

IN VITRO MATURATION OF THE HUMAN OVUM

[Article by M.A. Petrov-Maslakov, A.P. Dyban, V.A. Samoukina, A.I. Nikitin, I.P. Patrikyan, Institute of Obstetrics and Gynecology, USSR Academy of Medical Sciences, and Institute of Experimental Medicine, USSR Academy of Medical Sciences, Leningrad; Moscow, Vestnik Akademii Meditsinskikh Nauk SSSR, Russian, No 2, 1972, pp 60-65]

Cytogenetic investigations of human sex cells are of substantial interest both to theoretical and clinical medicine. We know that some congenital pathological states (for example, Down's, Shereshevskiy-Turner, Klinefelter syndromes, and others) are determined by numerical chromosomal aberrations arising in parental sex cells when chromosomes do not separate in meiosis (Penrose, 1954; Lejeune et al., 1959; Lejeune et al., 1960). It was also shown that a considerable number of spontaneous miscarriages is related to chromosomal aberrations formed with nonseparation of chromosomes in meiosis or splitting of the zygote (Carr, 1965; N.P. Bochkov and N.S. Sconova, 1969). In the presence of diseases associated with prolonged fertility (Stein-Leventhal syndrome) impaired maturation of the ovum and degenerative changes therein were demonstrated (A.I. Nikitin and N.A. Samoukina, 1969, 1970).

Thus, investigation of maturing sex cells brings us closer to understanding the mechanism of chromosome pathology, miscarriages, and some forms of fertility in man.

In addition, one can clearly demonstrate different types of chromosomal anomalies(for example, translocations, inversions, and others) in the meiotic chromosomes of sex cells, which are unnoticeable when analyzing mitotic chromosomes of blood cells and other somatic tissues. In such cases, examination of meiotic chromosomes would permit detection of carriers of chromosomal aberrations, and this has definite diagnostic and prognostic value.

It is not surprising that contemporary cytogenetics is concentrating on the study of human sex cells (Carr, 1969; A.A. Prokof'yeva-Bel'govskaya, 1971).

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

USSR UDC: 681.3.06:51

NIKITIN, A. I., SHURUBURA, V. P.

"On a Basis Language for Modeling of Systems"

V sb. Mat. obespecheniye ETsVM. Vyp. 4 (Mathematical Provision of Digital Computers--collection of works, No 4), Kiev, 1970, pp 21-44 (from RZh--Kibernetika, No 7, Jul 71, Abstract No 7V709)

Translation: The author analyzes and compares the expressive possibilities of languages for modeling systems of discrete events: GPSSIII, SIMSCRIPT, SOL, SIMULA, SLENG, SIMULA-67. Considering the problem of modeling the behavior of digital computer communications systems with user panels and external storage devices, the authors developed the modeling language presented in the previous article (abstract 7V708). The general requirements imposed on a language for modeling systems of discrete events are discussed, and an example is presented of description of the simplest model of a computer system which includes a user panel, central processor, operational memory and magnetic tapes in the language developed by the authors. V. Tkach.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

USSR UDC: 681.3.06:51

MIKHAYLOV, V. A., NIKITIN, A. I.

"Computer Technology and Development of Operational Computer Systems"

V sb. Mat. obespecheniye ETsVM. Vyp. 4 (Mathematical Provision of Digital Computers--collection of works, No 4), Kiev, 1970, pp 3-20 (from RZh-Kibernetika, No 7, Jul 71, Abstract No 7V737)

Translation: The authors consider functions of operational digital computer systems which realize package processing of problems, operation with time division with several users, and operation in real time. The basic concepts of operational systems are clarified as well as methods of realization of multiprogram operation and criteria of effectiveness of systems. Trends of development and problems of operational digital computer systems are considered in general outlines. V. Tkach.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

USSR UDC: 681.3

DOVGYALLO, A. M., NIKITIN, A. I., PLATONOV, B. A., SEMOTYUK, V. P., YUSHCHENKO, Ye. I.

"On One Approach to Developing a System of Instruction in Programming Languages on a Digital Computer Base"

V sb. Primeneniye tsifr. vychisl. mashin dlya obuch. programmir. (Use of Digital Computers for the Teaching of Programming--collection of works), Kiev, 1970, pp 25-30 (from RZh-Kibernetika, No 7, Jul 71, Abstract No 7V780)

[No abstract]

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

USSR

UDC: 621.373:530.145.6

BASOV, N. G., GALOCHKIN, V. T., KULAKOV, L. V., MARKIN, Ye. P., NIKITIN, A. I., ORAYEVSKIY, A. N.

"A Chemical Laser Based on the Mixture $D_2+F_2+CO_2$"

Kratk. soobshch. po fiz. (Brief Reports on Physics), 1970, No 8, pp 10-14 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12D226)

Translation: To produce emission on the mixture $D_2+F_2+CO_2$, the authors used the idea of creating a population inversion by transmitting excitation from a "hot" to a "cold" reaction product. With the ratio of D_2 and F_2 pressures equal to 0.9:0.9 mm Hg, the half-width emission pulse duration is ~3 μsec. The addition of 0.1 mm Hg of CO_2 to this mixture cuts the pulse duration in half, and when the pressure is increased to 0.3 mm Hg, emission is cut off on a wavelength of 4 μ, but emission appears on a wave of 10.6 μ. As the pressure rises further, the emission intensity of the pulse increases, reaching a maximum in the range of 1-2 mm Hg. The pulse duration of emission on activated CO_2 molecules is 400 μsec, i. e. it corresponds to the time of existence of chemiluminescence of excited DF* molecules. The energy in the emission pulse on CO_2 molecules increases in comparison with the emission energy of DF* by a factor of 10, which corresponds to an increase in the quantum yield by a factor of 25. A. K.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

1/2 040 UNCLASSIFIED PROCESSING DATE--23OCT70
TITLE--BRANCHING REACTIONS AND CHEMICAL LASERS -U-

AUTHOR-(05)-BASOV, N.G., MARKIN, E.P., NIKITIN, A.I., ORAEVSKY, A.N., LEBEDEV, P.N.
COUNTRY OF INFO--USSR, UNITED STATES

N

SOURCE--IEEE J. QUANTUM ELECTRONICS, USA, VOL. QE-6, NO. 3, P. 183-4, MARCH 1970, SECOND CONFERENCE ON CHEMICAL AND MOLECULAR LASERS. DIGEST.
DATE PUBLISHED----MAR70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--CHEMICAL REACTION, HYDROGEN, FLUORINE, AMMONIA, CARBON DIOXIDE, CHEMICAL LASER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/0075 STEP NO--US/0000/70/000/003/0183/0184

CIRC ACCESSION NO--AT0123847
UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

2/2 040 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AT0123847

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ABSTRACT ONLY GIVEN, SUBSTANTIALLY AS FOLLOWS. THE AUTHORS DISCUSS THE PECULIARITIES OF POPULATION INVERSION WHICH OCCUR IN BRANCHED CHEMICAL REACTIONS AND EXPERIMENTAL RESULTS OBTAINED WITH MIXTURES H SUB2 PLUS F SUB2 AND HN SUB3 PLUS CO SUB2. FACILITY: PHYS. INST., MOSCOW, USSR.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

USSR

UDC 539.1

VOROB'YEV, A. A., GRACHEV, V. T., KONDUROV, I. A., NIKITIN, A. M., and SELIVESTROV, D. M., Physicotechnical Institute imeni A. F. Ioffe

"The Formation of Light Nuclei in the Thermal-Neutron Induced Fission Reaction of Uranium Isotopes"

Moscow, Problemy Fiziki Elementarnykh Chastits i Atomnogo Yadra [(Problems of the Physics of Elementary Particles and the Atomic Nucleus)], Atomizdat, Vol 2, No 4, 1972, pp 939-958

Abstract: Consideration is given to the results of an experimental study of light nuclei produced in the process of thermal-neutron induced ternary fission of U^{235} and U^{233}. The experimental installation is described. Instead of using semiconductor-detector $\Delta E - E$ telescopes for identification of the particles, a mass spectrometer was used for simultaneous measurement of the following particle parameters: BP, v, E, $\Delta E/\Delta x$. Data on the yield and energy spectra of hydrogen, helium, lithium, and beryllium isotopes are presented. The yields of all the isotopes were measured with respect to the yield of the alpha-particles. These results are compared with the theoretical data and with data obtained from fission under the action of fast protons. 12 figures, 6 tables, 32 references.
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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

1/2 026 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--PERITONITIS 6N PATIENTS WITH ACUTE APPENDICITIS -U-

AUTHOR-(03)-MAYAT, V.S., FEDOROV, V.D., NIKITIN, A.M.

COUNTRY OF INFO--USSR

SOURCE--KHIRURGIYA, 1970, NR 4, PP 89-97

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--DIGESTIVE SYSTEM DISEASE, SURGERY, PERITONEUM, ANTIBIOTIC DRUG EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1983/1232 STEP NO--UR/0531/70/000/004/0089/0097

CIRC ACCESSION NO--AP0054127

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

UNCLASSIFIED PROCESSING DATE--18SEP70

2/2 026

CIRC ACCESSION NO--AP0054127

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. FOR A TWENTY YEAR PERIOD THE CLINIC OPERATED UPON MORE THAN 20,000 PATIENTS WITH ACUTE APPENDICITIS, DURING THE LAST TEN YEARS THERE WAS NOTED AN INCREASED INCIDENCE OF EXTREME FORMS OF DESTRUCTION OF THE VERMIFORM APPENDIX AND SUCH COMPLICATIONS AS PERFORATION AND DIFFUSE SUPPURATIVE PERITONITIS. THIS RESULTED IN AN AUGMENTED POSTOPERATIVE LETHALITY. DIFFERENT FORMS OF PERITONITIS WERE OBSERVED IN 790 PATIENTS OUT OF THE LAST 5200 (15PERCENT) APPENDECTECTOMIES. LETHAL OUTCOMES WERE OBSERVED ONLY IN PATIENTS ADMITTED WITH MANIFESTATIONS OF PERITONITIS. COMPLEX TREATMENT PROVED TO BE LEAST EFFECTIVE IN DIFFUSE AND GENERAL SUPPURATIVE PERITONITIS. BACTERIOLOGICAL INVESTIGATIONS ENABLED TO SUBSTANTIATE THE NECESSITY OF USING ANTIBIOTICS OF THE NEOMYCIN SERIES. BEST RESULTS WERE OBTAINED IN PATIENTS IN WHOM SANATION OF THE ABDOMINAL CAVITY WAS CARRIED OUT BY MEANS OF WIDE LAPAROTOMY AND MASSIVE IRRIGATION WITH AN ISOTONIC SOLUTION WITH SUBSEQUENT PROLONGED FLOW IRRIGATION (5 TO 6 LITERS OF RINGER'S SOLUTION WITH 5 TO 6 GM OF CANAMYCIN PER 24 HOURS). AN ANALYSIS OF CLINICAL OBSERVATIONS ENABLED TO CONCLUDE THAT TO REDUCE THE LETHALITY IN ACUTE APPENDICITIS IT IS NECESSARY TO FURTHER IMPROVE THE TECHNIQUES OF TREATING SUPPURATIVE PERITONITIS, TO WIDEN THE SANITARY EDUCATION WORK AND TO INCREASE THE QUALIFICATION OF PHYSICIANS IN THE DIAGNOSIS OF ACUTE SURGICAL DISEASES OF ABDOMINAL ORGANS.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

USSR

UDC: 8.74

KONDALEV, A. I., NIKITIN, A. N.

"Comparative Evaluation of Algorithms for Functioning of a Voltage to Code Converter"

Kibern. Tekhn. [Cybernetic Equipment--Collection of Works], Kiev, 1971, pp 223-230 (Translated from Referativnyy Zhurnal Kibernetika, No 11, 1972, Abstract No 11V521, by V. Mikheyev)

Translation: A method is presented for selection of structural plans of VCC so that the functioning algorithms which they embody are best suited for performance of their assigned tasks in the sense of optimality of a certain effectiveness characteristic. The effectiveness characteristic of the functional algorithm of a VCC is the numerical estimate of the agreement of the results produced when the algorithm meets certain fixed requirements. The basic numerical characteristics of VCC algorithms used are: the set of operation, number of digits, accuracy, complexity and operating time. The effectiveness characteristics are defined as functionals fixed in the set of functional algorithms.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

1/2 023 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--LUMINESCENT STUDY OF CONFORMATIONAL TRANSITIONS IN CHYMOTRYPSIN --U-

AUTHOR-(02)-DEMCHENKO, V.V., NIKITIN, A.N.

COUNTRY OF INFO--USSR

SOURCE--ZH. FIZ. KHIM. 1970, 44(3), 781-4

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, CHEMISTRY

TOPIC TAGS--TRYPSIN, FLUORESCENCE SPECTRUM, TEMPERATURE TEST, HYDROGEN ION CONCENTRATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/0284 STEP NO--UR/0076/70/044/003/0781/0784

CIRC ACCESSION NO--AP0134089

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

2/2 023 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0134089

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. TEMP. AND SUBP H DEPENDENCES OF CONFORMATIONAL TRANSITIONS IN CHYMOTRYPSIN WERE STUDIED. THE TRANSITION REGION WAS CHARACTERIZED BY SHARP DISPLACEMENT OF THE MAX. WAVELENGTH OF LUMINESCENCE, AND BY A DECREASE OF ITS INTENSITY. THE LUMINESCENCE MEASUREMENTS ENABLED CALCN. OF ACTIVATION ENTROPY, AND ENTHALPY OF DENATURATION OF CHYMOTRYPSIN BY UREA. THE IONIZATION CONSTS. OF ACTIVE CENTER GROUPS DURING HYDROLYSIS OF P NITROPHENYL ESTER OF DL PHENYLALANINE BY CHYMOTRYPSIN WERE STUDIED.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

Acc. Nr: AP0049808

Abstracting Service: INTERNAT. AEROSPACE ABST

Ref. Code: 5-70 4R0170

A70-23870 # Temperature field in a polymer material during its multiple heating (Temperaturnoe pole v polimernom materiale pri mnogokratnom ego nagreve). A. T. Nikitin and V. I. Bobrov. *Inzhenerno-Fizicheskii Zhurnal*, vol. 18, Jan. 1970, p. 139-145. In Russian.

Investigation of the repeated heating from within of a two-layer cylinder consisting of a polymer material and an outer shell made of a heat conducting material. A heat conduction equation is derived for the polymer material which accounts for its decomposition and for the heat effects arising in this process. The problem is solved for temperature-dependent thermophysical characteristics. Results obtained with a computer show that the polymer acts as a blocking layer to temperatures higher than 673 deg K due to its decomposition.

T.M.

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19801730

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

USSR

UDC: 51

KULYGINA, M. M. and NIKITIN, A. V.

"Gradient Method of Solving Transport Problems"

Sb. tr. Vses. zaoch. politekhn. in-t (Collection of Works, All-Union Correspondence Polytechnical Institute) No 79, 1973, pp 33-40 (from RZh--Matematika, No 1, 1974, Abstract No 1V474)

Translation: An algorithm is proposed for solving a transport problem which consists in solving a dual problem. Let the original problem be written as

$$\sum_{i,j} c_{ij}x_{ij} \to \min$$

with $\sum_j k_{ij} = a_i$, $\sum_i k_{ij} = b_j$. The specific function of the dual problem is $T(U,V) = \sum_j b_j v_j - \sum_i a_i u_i$, where u_i are the potentials of

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

USSR

KULYGINA, M. M. and NIKITIN, A. V., Sb. tr. Vses. zaoch. politekhn. in-t, No 79, 1973, pp 33-40

the lines and v_j are the potentials of the columns. The condition $v_j = \min_i (u_i + c_{ij})$, required for optimity of the plan, is fixed. This permits rewriting $T(U,V)$ as $S(U)$, where $S(U)$ is a piecewise linear convex function.

The gradient method is considered for finding the maximum of $S(U)$. It is shown that its realization is connected with the derivation of the bonding components of a bi-partite graph at each iteration. A description is given of a "weaker" algorithm which does not involve graphs. Ye. Dinits.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

1/2 039 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--PHYSICAL PROPERTIES OF NITROGEN CONTAINING SYNTHETIC DIAMONDS -U-

AUTHOR-(03)-NIKITIN, A.V., KLIYENTOVA, G.P., BEZRUKOV, G.N.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(2) 379-1

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS, EARTH SCIENCES AND OCEANOGRAPHY, CHEMISTRY

TOPIC TAGS--PHYSICAL CHEMISTRY PROPERTY, NITROGEN, DIAMOND, CHEMICAL SYNTHESIS, X RAY DIFFRACTION ANALYSIS, CRYSTAL LATTICE STRUCTURE, CRYSTAL IMPURITY, ALUMINUM, BORON, LUMINESCENCE, THERMO EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/0547 STEP NO--UR/0363/70/006/002/0370/0371

CIRC ACCESSION NO--AP0105532

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

2/2 039 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0105532

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DATA ARE PRESENTED CONCERNING CERTAIN PHYS. PROPERTIES OF SYNTHETIC DIAMONDS SYNTHESIZED IN A MEDIUM OF EXCESS N SUB2. LAUE AND POWDER X RAY DIFFRACTION METHODS WERE USED TO STUDY THE CRYSTALS PREPD. THE LATTICE PARAMETER OF THE DOPED CRYSTALS WAS ALPHA EQUAL 3.5680 ANGSTROM, WHICH DIFFERS SOMEWHAT FROM THAT FOUND BY OTHER INVESTIGATORS AND FOR OTHER SYNTHETIC DIAMOND CRYSTALS. THERMOSCINTILLATION CURVES WERE ALSO TAKEN FOR THESE SAMPLES, AT 20-400DEGREES, THE HEATING RATE BEING 1DEGREE-SEC. THE PREVIOUS ASSUMPTION THAT N TAKES PART IN THE FORMATION OF DEFECTS RESPONSIBLE FOR THERMOSCINTILLATION HAS BEEN CONFIRMED. THREE VERY INTENSE AND HIGHLY DISCERNIBLE PEAKS WERE OBSD., AT 100-115, 150, AND 260DEGREES, WITH A 4TH MAX. AT 215DEGREES. THE CALCD. ACTIVATION ENERGIES FOR THESE WERE 0.37, 0.53, 0.61, AND 0.84 EV, RESP. INTRODUCTING B AND AL IMPURITIES INTO THE DIAMOND LATTICE UNDER CERTAIN CONDITIONS ALSO INCREASES THE INTENSITY OF THE CORRESPONDING THERMOLUMINESCENCE PEAKS.

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

USSR

UDC: 546.26--162

NIKITIN, A. V., KLIYENTOVA, G. P., and BEZRUKOV, G. N., All-Union Scientific Research Institute for the Synthesis of Mineral Ore

"Certain Physical Properties of Nitrogen-Doped Artificial Diamonds"

Moscow, Neorganicheskiye Materialy, Vol 6, No 2, Feb 70, pp 370-371

Abstract: Despite its scientific and practical importance, there is relatively little information on the effect of nitrogen on the properties of artificial diamonds. This paper presents preliminary data on some of the properties of man-made diamonds synthesized in a nitrogen-rich medium. The specimens were synthesized by the widely employed method of high temperatures and pressures. Nitrogen was added to carbon dissolving metals in amounts of 5 to 20% in the form of Mn_4N synthesized for this purpose by a conventional method. The diamond crystals obtained in this manner actually contained higher concentrations of the nitrogen impurity (by two or three orders of magnitude). Their color was densely-green (transparent crystals) and black (non-transparent crystals). About 20% of the crystals with the added nitrogen impurity were twins. Use was made of Laue diffraction patterns and the powder method to analyze the crystals. Extrareflections were observed in the green crystals, an anomaly related to crystal lattice defects caused by foreign atoms, particularly nitrogen and metal carbides. A

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

USSR

NIKITIN, A. V., et al., Neorganicheskiye Materialy, Vol 6, No 3, Feb 70, pp 370-371

thermoluminescence curve shown in the original article indicates new peaks. Earlier research indicates an increased luminescence in artificial diamonds with addition of boron and aluminum. The physical and morphological characteristics of diamonds grown in a nitrogen medium are readily explained if the assumption is made of the formation of carbon compounds with $M_mC_nN_p$-type metals. The formation and decomposition of such intermediate compounds considerably affect the kinetics of crystallization and properties of obtained crystals.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

USSR UDC 619.611.9-022.6+636.1+636.2+636.4+636.52/.58

ONUFRIYEV, V. P.; DUDNIKOV, A. I.; MURAVYEV, V. K.; SHVETSOV, Yu. F.; CHUNAYEV, Yu. V.; KRAVCHENKO, V. M.; ZAKHAROV, V. M.; PRONIN, I. A.; NIKITIN, A. Y.

"Diatelic Immunization of Cows with Foot-and-Mouth Disease and Prospects for Obtaining Immune Milk"

Vladimir, V sb. Yashchur. T. 1 (Foot-and-Mouth Disease, Vol 1 -- Collection of Works), 1970, pp 160-172 (from RZh-58. Zhivotnovodstvo i Veterinariya, No 4, Apr 71, Abstract No 4.58.573)

Translation: Diatelic immunization of cows with foot-and-mouth disease antibodies provides lactoserum and immunolactone with a high concentration of foot-and-mouth disease antibodies. The foot-and-mouth disease immunolactone has pronounced preventive properties in research with baby mice, guinea pigs, bull calves, and suckling pigs. Polyvalent foot-and-mouth disease immunolactone has a more pronounced virus-neutralizing activity with respect to heterologous strains of foot-and-mouth disease virus

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

USSR

ONUFRIYEV, V. P., et al, V sb. Yashchur. T. 1, 1970, pp 160-172

than the monovalent one. The high specific activity of the foot-and-mouth disease lactone, obtained under biological production conditions by immunization of cows with inactivated foot-and-mouth disease virus, indicates a promising use of the diatelic immunization method under industrial conditions.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

USSR

UDC 669.14;620.192.43/.49

NIKITIN, B. M., PIROZHKOVA, V. P., and YAKOVLEV, B. F., Zaporozh'ye

"On the Nature of Inclusions in Electroslag Melted Steel"

Moscow, Izvestiya Akademii Nauk SSSR, No 5, 1973, pp 65-68

Abstract: The nature of inclusions on splits and of the mechanism of their generation in electroslag melted steel was investigated in order to clarify observed defects in the production of some steel brands by the ESM method. Microsections of specimens of 30KhGSNA and 38KhMYuA brands of steel, which was produced in industrial furnaces with the application of ANF-6 slag, were investigated by crstallo-optical and chemical methods. The results made it possible to indicate the probable mechanism of the formation of inclusions on splits of electroslag steel. The non-metallic films on the splits in fractures of specimens of electroslag steel contain oxides, nitrides, and sub-oxides or aluminum; the relation between them is determined by the composition of the remeltable steel. In 38KhMYuA steel the nitride inclusions possess a defective crystalline form; they consist for the most part of aluminum nitride and finely dispersed metallic aluminum. Four figures, four formulas, ten bibliographic references.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

USSR UDC 669.15'295-194

KAMARDIN, V. A., YEFIMOV, I. V., KASPER, N. V., NIKITIN, B. M., and YAKOVLEV, N. F.

"Role of the Lower Oxides in Titanium Redox Reactions During Electrical Melting of Titanium-Containing Steels"

Moscow, Izvestiya Akademii Nauk SSSR, Metally, No 2, Mar-Apr 72, pp 66-70

Abstract: An investigation was made in an attempt to determine the mechanism of titanium oxidation (reduction) in normal steel melting processes. Tests were made using steel OKh18N10T and a synthetic slag of the CaF_2-Al_2O_3 system which were melted in a TVV-5 crucible vacuum furnace. To the molten metal, having a constant alumina content (40%), titanium dioxide was added (up to 20%). With increased TiO_2 concentration, the amount of Ti_2O_3 in the slag also increased and small quantities of TiO were found. These titanium oxides depleted some of the titanium in the original metal and lowered the equilibrium concentration of Ti. In order to neutralize the negative action of weak oxides it is necessary to provide for a higher Ti_2O_3/TiO_2 ratio in the slag, which can be done by having a higher TiO_2 content in the initial slag. Four figures, 1 table, 6 bibliographic references.
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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

USSR

UDC: 621.791.621.785.18

NIKITIN, D. G., KOVALENKO, A. A.

"Weldability of Corrosion-Resistant Thin-Sheet Steels with Reduced Nickel Content"

Kiev, Avtomaticheskaya Svarka, No 8, Aug 73, pp 47-49.

Abstract: This work studied the weldability of thin-sheet steels types OKh22N5T, OKh18G8N2T and Kh18AN5, chemical compositions as follows:

TYPE	Content, %								
	C	Si	Mn	Cr	Ni	Ti	N	S	P
OKh22N5T	0.080	0.37	0.57	21.64	5.27	0.41	--	0.010	0.030
OKh18G8N2T	0.089	0.23	7.78	18.02	2.01	0.35	--	0.008	0.250
Kh18AN5	0.065	0.60	1.45	18.32	5.08	--	0.2	0.012	0.029

The steels were found not to be inclined to the formation of hot cracks during welding. Additive wire types are recommended for argon-arc welding with a tungsten electode. The thermal cycle of welding causes grain growth, slightly decreasing the ductility of the welded joints. Ductility can be increased for types OKh22N5T and OKh18G8N2T steels by heat treatment at 850° C.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

USSR

UDC 613.46

NIKITIN, D. I.

"New Forms of Microorganisms"

Uspekhi mikrobiologii (Advances in Microbiology), No 7, 1971

Abstract: The main scientific ideas and methods used in ecological microbiology are examined and new, hitherto unknown forms of microorganisms are described. The article is in two parts. The first, "Elaboration of Ideas and Creation of Methods," traces the continuity of the ideas of the leading Soviet scientists S. N. Vinogradskiy and V. I. Vernadskiy in the works of their successors, who made a substantial contribution to the development of microbiology. It also describes the progress made in devising methods for studying microorganisms in natural substrates. The second part, "Search for New Organisms," describes a great many new organisms discovered by Soviet and foreign investigators.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

USSR

UDC 614.445

NIKITIN, D. P.

"Epidemiological Aspects of the Sanitary Protection of Bodies of Water"

Moscow, Gigiyena i Sanitariya, No 12, 1973, pp 61-63

Abstract: The use of water for drinking, cooking, swimming, recreation, and other purposes has long been recognized as a major factor in the spread of intestinal infections. For example, a study of the incidence of acute intestinal diseases in several Volga regions showed that from 1957 to 1964, 27% of all cases of typhoid and 6% of the cases of dysentery were water-related. There have been numerous epidemics of typhoid paratyphoid, and cholera among the people living along the rivers in many parts of the Soviet Union. The situation will gradually improve as local and national government efforts to prevent pollution and treat sewage become increasingly effective. Secretary Brezhnev demonstrated a high level awareness of the problem and a determination to solve it in his report to the Central Committee of the CPSU at the 24th Congress. Larger sums have been allocated in the 9th Five-Year Plan for the installation of treatment facilities than in any previous five-year plan. In accordance with a 1972 decree of the Central Committee of the CPSU and USSR Council of Ministers, "On Measures to Prevent Pollution of the Volga and Ural River Basins by Untreated Sewage," various government ministries and departments

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USSR

NIKITIN, D. P., Gigiyena i Sanitariya, No 12, 1973, pp 61-63

have been assigned the task of building sewage treatment facilities in 1972-1975 in 421 industrial plants in 15 cities located along the Volga and Kama rivers. Comparable efforts are under way elsewhere in the Soviet Union.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

1/2 021 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--THEORY OF EXCITATION TRANSFER IN COLLISIONS BETWEEN ALKALI ATOMS. II. DISSIMILAR PARTNERS -U-

AUTHOR-(04)-DASHEVSKAYA, E.I., NIKITIN, E.E., VORONIN, A.I., ZEMBEKOV, A.A.

COUNTRY OF INFO--USSR

SOURCE--CAN. J. PHYS. 1970, 48(8), 981-92

DATE PUBLISHED-------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--EXCITATION ENERGY, PULSE EXCITATION, ALKALI, ATOM, DIPOLE INTERACTION, EXCITATION CROSS SECTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/1827 STEP NO--CN/0000/70/048/008/0981/0992

CIRC ACCESSION NO--AP0118791

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

2/2 021 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0118791

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. POSSIBLE MECHANISMS ARE CONSIDERED FOR THE TRANSFER OF ELECTRONIC EXCITATION ENERGY IN COLLISIONS BETWEEN AN EXCITED ALKALI ATOM M SUBA SEXTILE (PRIME2 P SUBJ) AND AN UNEXICTED ATOM M SUBB (PRIME2 S SUBONE HALF). A DIPOLE DIPOLE INTERACTION WHICH IS RESPONSIBLE FOR THE TRANSFER OF ELECTRONIC EXCITATION ENERGY IN COLLISIONS BETWEEN IDENTICAL PARTNERS (M SUBA EQUALS M SUBB) IS NOT SUFFICIENT TO EXPLAIN THE OBSD. MAGNITUDES OF THE CROSS SECTIONS AND THEREFORE, THE EXCHANGE INTERACTION CAN NO LONGER BE NEGLECTED. IF THE EXCHANGE INTERACTION IS TAKEN INTO ACCOUNT, THERE ARE REGIONS OF NONADIABATICITY IN THE ENERGY DIAGRAM, WHICH ARE PROBABLY RESPONSIBLE FOR THE CHANGE IN THE ELECTRONIC ENERGY STATES OF THE COLLISION PARTNERS. THE CALCD. CROSS SECTIONS ARE COMPARED WITH EXPTL. VALUES.

FAILITY: INST. TERR. MAGN., IONOS. RADIO WAVE PROPAGATION, MOSCOW, USSR.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

USSR

UDC 622.243.22

KUCHERENKO, A. Ya. and NIKITIN, E. N. (SevKavNIPIneft' -- North Caucasian Scientific Research and Planning Institute of Petroleum)

"Drilling a Shaft 295 mm in Diameter to a Depth of 4673 Meters"

Moscow, Bureniye, No 9, 1972, pp 6-9

Abstract: A description is given of the drilling conditions, the composition of the bottom of the drilling column, the parameters of the drilling regimen, and the specifications of the drilling fluid in the drilling of exploratory shaft No 47, with a planned depth of 7,000 m, sunk in the southern limb of the Zamankul fold of the Sunzhensk range 120 km west of Groznyy, to a depth of 4673 meters. This is the greatest depth ever reached by a bit 295 mm in diameter in the areas of Checheno-Ingushetiya. 2 figures. 1 table.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

1/2 022 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--ALLOYING OF THE HIGHER MANGANESE SILICIDE ON THE BASIS OF RESULTS OF MICROPROBE ANALYSIS -U-

AUTHOR-(04)-NIKITIN, E.N., SIDOROV, A.F., TARASOV, V.I., ZASLAVSKIY, A.I.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER 1970, 6(3), 604-5

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--MANGANESE COMPOUND, SILICIDE, SEMICONDUCTOR MATERIAL, BORON CONTAINING ALLOY, ALUMINUM CONTAINING ALLOY, GERMANIUM COMPOUND, ELECTRON MICROPROBE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1996/0827 STEP NO--UR/0363/70/006/003/0604/0605

CIRC ACCESSION NO--AP0118005

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

2/2 022 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0118005

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ALLOYED SAMPLES WERE CRYSTD. IN QUARTZ AMPULS BY THE BRIDGMAN METHOD AT A CRYSTN. RATE OF 1 CM-HR. DURING THE CRYSTN. OF LIQ. OF COMPN. MNSI SUB1.7 GE SUB0.03, ONLY PARTIAL DISSOLUTION OF GE IN MN SUB11 SI SUB19 OCCURS. THE EXCESS GE FORMS A UNIFORM IMPURITH IN THE FORM OF A SI-GE SOLID SOLN. THE SOLY. OF GE IN MN SUB11 SI SUB19 IS SIMILAR TO 1.8 WT. PERCENT. THE SUBSTITUTIONAL SOLID SOLN. FORMED HAS THE COMPN. MNSI SUB1.715 GE SUB0.015. THE SUBSTITUTION OF A PART OF SI BY GE SHOULD NOT BE ACCOMPAINED BY A CHANGE IN ELEC. COND.; HOWEVER, A SLIGHT INCREASE IN ELEC. COND. OCCURS, WITH THE THERMAL EMF. REMAINING UNCHANGED. THIS INCREASE IN ELEC. COND. CAN THEN BE EXPLAINED BY INCREASED MOBILITY, WHICH IS CHARACTERISTIC FOR SEMICONDUCTOR MATERIALS WITH A DEFECT STRUCTURE. UPON ALLOYING MN SUB11 SI SUB19 WITH B, THE PPTN. OUT OF A CHEM. COMPD. OF THE COMPN. MNB AND OF FREE SI WAS OBSD. THE HIGH M.P. AND THE REGULAR LINEAR OUTLINES OF BOTH PHASES DISTINGUISHED THESE CRYSTALS FROM A EUTECTIC MIXT. THE SOLY. OF MNB AT ROOM TEMP. IS SMALLER THAN 0.6 WT. PERCENT. ALLOYING WITH B INCREASES THE CARRIER CONCN. WITHOUT NOTICEABLY DECREASING THE MOBILITY. THE DISSOLVED AL CONTENT IN MN SUB11 SI SUB19 ALONG THE LENGTH OF THE BOULE VARIED. IN THE PRESENCE OF GE, THE SOLY. OF AL AND B IN MN SUB11 S SUB19 INCREASE AT LEAST BY ONE ORDER OF MAGNITUDE. FROM ELEC. PROPERTY MEASUREMENTS, THE SAMPLES ALLOYED WITH B AND AL ARE CHARACTERIZED BY INCREASED ELEC. COND. AT HIGH TEMPS. AS COMPARED TO THE PURE MATERIAL. FACILITY: INST. POLUPROVOD., LENINGRAD, USSR.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

1/2 016 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--AUTOMATIC ANALYZER OF TIN IN SLURRIES -U-

AUTHOR-(02)-NIKITIN, F.V., KATS, I.E.

COUNTRY OF INFO--USSR

SOURCE--ZAVOD. LAB. 1970, 36(1), 116-17

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, MATERIALS, METHODS AND EQUIPMENT

TOPIC TAGS--CHEMICAL ANALYSIS, TIN, COAGULATION, AMIDE, AQUEOUS SOLUTION, X RAY ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1989/0600 STEP NO--UR/0032/70/036/001/0116/0117

CIRC ACCESSION NO--AP0107197

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

2/2 016 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0107197

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE SLURRY SAMPLE IS COAGULATED BY A POLYACRYLAMIDE SOLN. AND THE SN CONTENT DETD. IN 5 MIN BY EXCITATION OF X RAY FLUORESCENCE OF THE SN WITH PRIME170 TM. ANAL. OF SLURRIES CONTG. 0.14-2.3PERCENT SN AGREES WITH CHEM. ANAL. WITHIN 20PERCENT.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

USSR

UDC 621.771.064

NIKITIN, G. S., ZHUCHIN, V. N., KAPUSTIN, V. A., YEVSTROPOV, G. M., and TSVETKOV, A. I., Moscow Higher Technical School imeni Bauman, and the "Elektrostal'" Plant

"Rolling Deformation-Resistant Steels and Alloys in a Planetary Mill"

Moscow, Stal', No 2, Feb 71, pp 142-144

Abstract: This paper describes planetary mills which are now being combined with ingot-producing mills for continuous and integrated casting and rolling processes. The input to the planetary mill, used for the rolling part of the combined operation, can be fed in a continuous ingot from the crystallizer at the rate of 2.0-3.5 meters per minute. Among other advantages, the planetary mill can be fully automated, requiring no complex control system for regulating the production rate, and can be used for rolling deformation-resistant steels in a narrow temperature interval. Several of these mills are in operation in foreign countries but are used only for rolling. In the VNIIMETMASH (All-Union Scientific Research and Planning Design Institute of Metallurgical Machine Building)
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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

USSR

NIKITIN, G. S., et al, Stal', No 2, Feb 71, pp 142-144

a basically new planetary mill has been developed in which the metal is compressed from four sides. Known as the Tselikov-Nosal' system, the machine can result in substantial economies.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

USSR

UDC 551.48; 551.26

NIKITIN, I. K.

"Approximate Calculation of Thermally Stratified Turbulent Boundary Layer in the Area Beyond a Sharp Change in Roughness of the Surface Around which Flow Occurs"

Moscow, Gidromekhanika, No 17, 1971, p 60-68.

Abstract: Materials are presented from an experimental study of the influence of turbulence of the external flow on the characteristics of boundary layer flow. An approximate method is presented for calculating a turbulent boundary layer formed on a surface in the area beyond a sharp change in roughness. The calculations consider the influence of the turbulent external flow and thermal stratification in the boundary flow layer.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

USSR UDC: 532.517.4

NIKITIN, I. K.

"Generalizing the Semi-Empirical Theory of Turbulence in a Stream for Rough Surfaces With Various Modes of Appearance of the Roughness Characteristics"

V sb. Turbulentn. techeniya (Turbulent Currents--collection of works) Moscow, "Nauka," 1970, pp 62-69 (from RZh-Mekhanika, No. 2, Feb 71, Abstract No. 2B924)

Translation: An analysis is made of a large mass of experimental material regarding the laws of a current in a turbulent limited layer on rough surfaces. A method is proposed for generalizing the experimental data with the use of a new characteristic linear dimension determined from the formula $R_*\delta = u_*\delta/\varepsilon_\delta \approx \text{const}$, where u_* is the friction velocity, and ε_δ is the total coefficient of the turbulent and molecular kinematic viscosity. In the limits of the sublayer near the wall of thickness δ, the velocity profile is close to linear for any degree of roughness in the sur-

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

USSR

NIKITIN, I.K., V sb. Turbulentn. techeniya, Moscow, "Nauka" 1970, pp 62-69
(from RZh-Mekhanika, No 2, Feb 71, Abstract No 2B924)

face at which the flow occurs. Data of the magnitude of $R_*\delta$ is given as a function of the type of stream and the nature of the surface. Universal laws are developed for the coefficient of resistance and the velocity profile in the limited layer, and in a tube with the most varied types of roughness. It is shown that in a flow around smooth surfaces, the magnitude of δ coincides with the thickness of the laminar layer, δ_μ, in flow modes with full roughness, $\delta_\mu \ll \delta$, and the laminar does not affect the flow. It is noted that in thermal mass migration processes, even when $\delta_\mu \ll \delta$, the laminar sublayer may play an important part. A. N. Sekundov.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

USSR UDC 619:616.981.42.614.44

NIKITIN, I. N., Kazan' Veterinary Institute

"Economic Benefits of Brucellosis Control Measures"

Moscow, Veterinariya, No 10, 1971, pp 60-62

Abstract: Study of 26 cattle farms in Irkutskaya and Kirovskaya oblasts and the Tatar ASSR from 1963 to 1967 showed that the economic losses from brucellosis during this period (lowered birth rates, decreased milk production, forced slaughter of diseased animals, wages of farmhands serving isolation areas) amounted to 457,520 tubles or 226.04 rubles per diseased animal. The cost of control measures (examination of animals, vaccination, disinifection of farm structures, pasteurization of milk, repair of buildings, veterinary fees, and so forth) was 118,627 rubles or 10.78 rubles per animal. The expenses varied with the method used to eradicate the disease. Expenses were lowest when the sick animals were detected and slaughtered and highest when vaccine was used.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

1/2 018 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--REACTION OF FLUORINE WITH NITROGEN IN A BARRIER, SILENT, DISCHARGE -U-

AUTHOR-(03)-DUDIN, A.V., NIKITIN, I.V., ROSOLOVSKIY, V.YA.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, SER. KHIM. 1970, (3), 710-11

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, MATERIALS

TOPIC TAGS--FLUORINE, BOROSILICATE GLASS, NITROGEN, CHEMICAL REACTOR, GAS DISCHARGE, CHEMICAL DECOMPOSITION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/1545 STEP NO--UR/0062/70/000/003/0710/0711

CIRC ACCESSION NO--AP0125171

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

2/2 018 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0125171

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IN A COAXIAL BOROSILICATE GLASS REACTOR OZONIZER THERMOSTATED AT 20DEGREES AND OPERATED AT 15,000 V, PASSAGE OF 3:1 MIXT. OF F SUB2:N SUB2 RESULTED IN FORMATION OF NF SUB3 AS CONFIRMED BY IR ANAL. OF THE EFFLUENT. THE CONVERSION WAS 1.5-2PERCENT IN 1-6 HR RUNS. DECOMPN. OF NF SUB3 IN THE BARRIER DISCHARGE WAS EXAMD. DISSOCN. OF THE SUBSTANCE INCREASED WITH INCREASED DURATION OF EXPTS. AND WAS 95-8PERCENT IN CIRCULATION EXPTS. IN 5-6 HR. THUS, THE EASILY PROCEEDING REVERSE REACTION PREVENTS THE PREPN. OF NF SUB3 IN GOOD YIELD UNDER THESE CONDITIONS. THE CONVERSION WAS INCREASED BY PASSING THE GASES FROM THE OZONIZER INTO A TRAP CHILLED WITH LIQ. N AND THE CONCN. OF NF SUB3 IN SUCH A TRAP LOCATED ABOUT 30 CM FROM THE OZONIZER RESULTED IN ABOUT 10PERCENT CONVERSION DURING 4 HR RUNS.

FACILITY: INST. NOVYKH KHIM. PROBL., MOSCOW, USSR.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

1/2 040 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--FORMATION AND TRANSFORMATION OF RADICALS IN MYOINOSITOL UNDER THE INFLUENCE OF GAMMA RADIATION -U-

AUTHOR-(05)-NIKITIN, I.V., SHARPATYI, V.A., KUDRYASHOV, L.I., KOCHETKOV, N.K., EMANUEL, N.M.

COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(3), 635-8

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES, CHEMISTRY, NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--FREE RADICAL, CYCLOHEXANE, HYDROXYL RADICAL, EPR SPECTRUM, GAMMA RADIATION, RADIATION EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1992/2024 STEP NO--UR/0020/70/190/003/0635/0658

CIRC ACCESSION NO--AT0112979

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

2/2 040 UNCLASSIFIED PROCESSING DATE--090CT70

CIRC ACCESSION NO--AT0112979

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE RADICALS FORMED BY EXPOSURE OF MYO INOSITOL TO GAMMA RADIATION WERE CHARACTERIZED BY THEIR EPR SPECTRA AND THE SPECTRAL DATA WERE REPORTED IN DETAIL. THE RADICALS WERE PRODUCED AT 77DEGREESK IN DRY AND HYDRATED MODES OF INOSITOL. THE EXISTENCE OF THE STABILIZED ELECTRON WAS EVIDENT FROM DEVELOPMENT OF COLOR IN THE SPECIMENS CONTG. H SUB2 O AND FROM THE FORM OF THE EPR SPECTRA. FACILITY: INST. ORG. KHIM. IM. ZELINSKOGO, MOSCOW, USSR.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

USSR

UDC 669.293

GAL', V. V., NIKITIN, K. A., PAVLOV, Yu. A., SAVINOV, V. K., and SKACHKOVA, T. M.
Moscow Institute of Steel and Alloys, Institute of High Temperatures of the Academy of Sciences USSR

"Study of the Process of Producing Niobium Carbide By Through Diffusion Saturation of Graphite"

Ordzhonikidze, Tsvetnaya Metallurgiya, No 2, 1973, pp 117-120

Abstract: The process of producing niobium and carbide by through diffusion saturation of graphite was analyzed, proceeding from the derived expression for the time τ required to realize a through saturation of the grain $\tau = R^2/6\beta D$, where R=initial radius of the grain, D=coefficient of reactive diffusion, and $\beta = \Delta C_1/\Delta C_2$, and ΔC_1=homogeneity range of the growing phase and ΔC_2=difference of solubilities in the growing phase and the saturable grain. The duration of saturation of a graphite granule was found to be less than the through saturation time of

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

USSR

GAL', V. V., et al., Tsvetnaya Metallurgiya, No 2, 1973, pp 117-120

a metal granule of the same size. Experimental results of niobium carbide production by diffusion saturation of graphite granules in a pseudo-liquefied layer by their interaction with $NbCl_5$ are reported. The temperature dependence T (duration of the experiment 1 hr) of the magnitude of the reaction surface S, referred to a single granule, is discussed by reference to the S/T diagram. The through diffusion saturation of graphite granules (0.6-0.8 mm), when using PG-50 porous graphite and niobium pentachloride, can be realized at temperatures $> 2400^{\circ}$ and $\sim$10 hrs aging. Two figures, one table, two formulas, five bibliographic references.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

USSR UDC 539.374

NIKITIN, L. V., and TOKBERGENOV, Dzh. B.

"The Stamping of a Spherical Shell"

Alma-Ata, Izvestiya Akademii Nauk, KazSSR, Seriya Fiziko-Matematicheskaya, No 3, May-Jun 72, pp 44-50

Abstract: An investigation was made of the stamping process of an axisymmetrical thin-walled spherical shell subjected to the action of pressure produced by explosion in a closed system. The mechanical condition of the material is described according to the theory of plastic flow, the intensity of stresses is considered a known function of the intensity of deformation rates. On the example of explosion stamping of a spherical shell, detailed calculations are presented with different geometric parameters and indices of polytropy and explosion intensity. The results are discussed by reference to diagrams showing dependences of particle velocities on the radius of the sphere and of the sphere final radius on the blasting charge intensity. The diagrams demonstrate that the radial velocity of particles depends on the volume of the blasting charge before the detonation, the intensity of the blasting charge, the degree of strain hardening, and the polytropy factor. Five illustr., nineteen formulas, five biblio. refs.
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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

USSR UDC: 546.821'17:535.34

ZHURAKOVSKIY, YE. A., NIKITIN, I. V. and LYUTAYA, M. D., Institute for Problems of Material Science, Academy of Sciences Ukrainian SSR

"X-Ray Spectra and Electron Structure of Titanium Nitrides of Limit Composition and Within the Homogeneity Region"

Moscow, Izvestiya Akademii nauk SSSR, Neorganicheskiye materialy, Vol 8, No 4, Apr 72, pp 708-713

Abstract: In addition to their great practical significance, titanium nitrides are of theoretical interest as compounds of variable composition with a wide homogeneity range. The existence of such compounds in a number of systems has as yet not been satisfactorily explained and is among the central problems of the physics and chemistry of solids. This study concerns the x-ray K- and L_{II}, L_{III} emission spectra and K absorption spectra of titanium in titanium nitrides of critical composition and within the homogeneity region (Ti_2N and $TiN_{0,60}$--$TiN_{1,0}$). For nitriding, use was made of 99.8% pure titanium powder with a maximum particle size of 40 μ.

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USSR

ZHURAKOVSKIY, YE. A., et al, Izvestiya Akademii nauk SSSR, Neorganicheskiye materialy, Vol 8, No 4, Apr 72, pp 708-713

The K-emission spectra were obtained by fluorescence using a modified DRUS unit. The optimum K-edge density of 5 mg/cm^2 was maintained constant over the entire series of homogenous nitrides Ti_{1-x} and Ti_2N. An RSM-500 unit was used to obtain ultra-soft $L_{II, III}$ emission spectra of Ti in titanium nitrides. Based on the concentration-dependent changes of the fine spectral structure and on data of quantum-mechanical computations by Bilz and Ern-Switendick, a chart is proposed for the redistribution of electron states of various symmetry in the spd-valence zone of TiN_x crystals of variable composition. The general nature of interactions in nitrides of critical composition of Ti_2N and TiN is discussed. The electron structure is correlated with the properties of titanium nitrides of limit composition and within the homogeneity region. (1 illustration, 2 tables, 24 bibliographic references).

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

1/2 025 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--GAMMA RADIATION OF PALLADIUM-99 -U-

AUTHOR-(05)-ANTONYEVA, N.M., GRIGORYEV, YE.P., KATYKHIN, G.S., NIKITIN, M.K., PROTASOVA, L.F.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSR, SER. FIZ. 1970, 34(1), 54-8

DATE PUBLISHED--------70

SUBJECT AREAS--NUCLEAR SCIENCE AND TECHNOLOGY

TOPIC TAGS--GAMMA SPECTRUM, PALLADIUM ISOTOPE, HALF LIFE, ISOTOPE SEPARATION, RADIATION INTENSITY, RADIOACTIVE DECAY SCHEME, BETA PARTICLE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1988/0228 STEP NO--UR/0048/70/034/001/0054/0058

CIRC ACCESSION NO--AP0105304

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

2/2 025 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0105304

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE GAMMA SPECTRUM OF THE PD FRACTION FROM CD IRRADIATED WITH 660-MEV RHO WAS STUDIED WITH GE(LI) DETECTORS. BESIDES PRIME99 PD, THE FRACTION ALSO CONTAINED OTHER PD NUCLIDES, AND PRIME98 RH, PRIME99 RH, AND PRIME104 AG. THE PRIME99 PD GAMMA LINES WERE IDENTIFIED FROM THEIR HALF LIVES AND FROM THE CONSISTENCY IN RELATIVE INTENSITIES DURING VARIOUS STAGES AFTER IRRADN. THE PROBABLY DECAY SCHEME OF PRIME99 PD IS PRESENTED. THE BETA TRANSITIONS TO PIRME99 RH LEVELS SHOWED A HIGH DEGREE OF PROBABILITY: LOG FT EQUALS 4.9 FOR THE 1ST EXCITED LEVEL. SOME SIMILARITIES IN THE DECAY SCHEMES OF PRIME99 PD AND PRIME101 PD ARE POINTED OUT. FACILITY: NAUCH.-ISSLED. FIZ. INST., LENINGRAD. GOS. UNIV., LENINGRAD, USSR.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

1/2 021 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--EXTRACTION OF RHODIUM STANNOUS CHLORIDE COMPLEXES BY TRI N BUTYL PHOSPHATE -U-

AUTHOR-(04)-KALININ, S.K., KATYKHIN, G.S., NIKITIN, M.K., YAKOVLEVA, G.A.

COUNTRY OF INFO--USSR

SOURCE--ZH. ANAL. KHIM. 1970, 25(3), 535-8

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--RHODIUM COMPOUND, TIN CHLORIDE, COMPLEX COMPOUND, ORGANIC PHOSPHATE, CHEMICAL SEPARATION, SOLVENT EXTRACTION, SPECTROGRAPHIC ANALYSIS, PHOTOMETRIC ANALYSIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3005/0013 STEP NO--UR/0075/70/025/003/0535/0538

CIRC ACCESSION NO--AP0132313

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

2/2 021 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0132313

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE OPTIMUM CONDITIONS WERE FOUND FOR THE EXTN. SEPN. OF TRACE AMTS. OF RH AS ITS COMPLEX WITH SNCL SUB2 FROM HCL MEDIA WITH BU SUB3 PO SUB4. RH CAN BE QUANT. EXTD. FROM 6.0M HCL OR FROM 2-6M HCLO SUB4 MEDIA BY USING GREATER THAN OR EQUAL TO 0.064M SNCL SUB2. EQUIL. IS ESTABLISHED AT VARIOUS INTERVALS FOR 0.5, 2.0, OR 6.0M HCL; IN THE LATTER CASE IT TAKES 30 SEC. RH CAN BE REEXTD. FROM THE ORG. PHASE WITH 0.25-0.5M HCL AFTER DILN. WITH C SUB6 H SUB6. RH CAN BE DETD. SPECTROGRAPHICALLY IN THE AQ. PHASE BY SUING THE RH 3434 ANGSTROM LINE OR BY A PHOTOMETRIC METHOD WITH SNCL SUB2.

FACILITY: STATE SCI. RES. DES. INST. GIPRONIKEL, LENINGRAD, USSR.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7"

"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

NIKITIN, M.M.

METALLURGY

JPRS 61321, 24 Feb. 74

SEMI-SELF MAINTAINED ELECTRICAL DISCHARGE IN METAL VAPORS AND ITS APPLICATION IN THE PRODUCTION OF COATINGS AND CONDENSATES IN A VACUUM

[Article by M. Kh. Shorshorov, M. M. Nikitin, G. N. Kiebanov and A. N. Chadov; Moscow, Plazmennyye Protsessy v Metallurgii i Tekhnologii Neorganicheskikh Materialov, Russian, 1973, pp 33-37]

The processes by which thin films are produced are based on physical phenomena that are used extensively in the development of refractory, wear-resistant, optical, protective coatings, and also of various components of electronic circuitry.

The operating conditions of film circuits and coatings impose rigid requirements on their properties (density, electrical conductivity, purity, strength of bond with substrate). These properties are determined by the mechanism of formation of condensates. The mechanism of formation of condensation nuclei and conditions of nucleation of the first layers and depend not only on the physical condition of the substrate surface (temperature, presence of oxide films, perfection of the crystal structure etc.), but also on the method and parameters of the application process, such as pressure and composition of the residual gas medium, kinetic energy and degree of ionization of precipitating atoms, rate of precipitation.

Thermal evaporation and cathode sputtering are the methods most frequently used for producing coatings and condensates. The use of electron-beam heating in thermal evaporation made it possible to greatly expand the range of materials that can be evaporated and to increase the productivity of the process in comparison with inductive and resistive heating. However the effectiveness of the electron beam method is limited by the very features of the process. As the rate of evaporation increases the number of collisions between electrons and atoms of the evaporated metal also increases. This results in energy loss and angular scattering [1,2]. The feasibility of using electron-beam evaporators is limited to a maximum pressure of 10^{-4} torr [3]. As a result of collisions the number of excited and ionized atoms increases. As the rate of evaporation increases the conductivity of the electrode gap increases and conditions are created that are favorable

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to the development of uncontrolled electrical discharge. The excessive increase of current destroys the working parts of the electron gun and poses a danger of failure of the high-voltage power source, designed for small currents. The development of the discharges makes the evaporation process unstable. Consequently the operation of electron-beam evaporators is possible only when ionization processes are limited [4].

At the same time the use of electrical discharge greatly increases the productivity of the evaporation process and improves the quality of the applied films [5,6]. The evaporation of materials by means of an excited arc in a vacuum insures the attainment of high precipitation rates. But the arc, possessing high efficiency in comparison with an electron beam, is characterized by instability of the evaporated flow in time. The operation of such an evaporator at low evaporation rates, which do not produce in the electrode gap the vapor with the density corresponding to arc excitation, is impossible [7].

This problem was solved for evaporation of zinc and cadmium [8]. By means of radiative heating between a molybdenum crucible, containing the metal to be evaporated, and an incandescent tungsten electrode, the required pressure is achieved and discharge occurs in the metal vapors. This method can be used only for evaporating metals with a low melting point.

An electron beam-plasma source design, during the operation of which the required vapor density between the electrode is achieved and maintained by means of electron-beam heating, was developed for the purpose of increasing the number of materials that can be evaporated and for improving evaporation process conditions [9].

The discharge in the metal vapors is stationary, since it can last for a rather long time at the given currents and voltages. The stability of discharge and the stability of the evaporation process depend both on the physical conditions of the discharge and on the properties and parameters of the power source.

Stabilization of a discharge with a falling volt-ampere characteristic can be achieved either through an auxiliary stabilizing resistance, or as a result of the corresponding external characteristic of a power source [10].

Since the energy and the number of particles that bombard the thermoelectronic cathode are not sufficient for developing secondary electron emission, capable of supporting independent arc discharge, the electrical discharge in metal vapors is semi-self supporting.

The flow of vapor that comes from the evaporator during discharge contains positive ions, electrons and neutral atoms. The ion and electron current of this plasma and the degree of ionization of the precipitated atoms were measured by the probe characteristics method [11].

As the rate of evaporation and discharge current increases the degree of ionization of the precipitated atoms of the vapor increases, reaching 30% for the investigated discharge parameters (a current of 1-3A and a voltage

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

Nuclear Physics

USSR

UDC 621.384.612

NIKITIN, M. M., Scientific Research Institute of Nuclear Physics and Electronic Equipment at Tomsk Polytechnical Institute imeni S. M. Kirov

"Study of the Linear Polarization of Synchrotron Radiation"

Tomsk, Izvestiya Vysshikh Uchebnykh Zavedeniy - Fizika, No. 12, 1970, pp 133-135

Abstract: The vertical-angular distribution of the intensity of the σ- and π-components of synchrotron radiation was measured for electron energies up to 1.2 Gev. A numerical calculation was given for correctly selecting the optical parameters of the experimental device for studying the intensity of the components of the linear polarization of radiation. Graphs are given showing the vertical-angular distribution of the intensity of the components of the linear polarization of synchrotron radiation for electron energies of 1000 Mev and 300 Mev. Another graph shows the ratio of the intensities of the polarization components for accelerated electron energies of 1000, 700, and 300 Mev in the spectral range from 3000 to 7000 A. Despite a small angular distribution in the radiation intensity and a short time for the

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

USSR

NIKITIN, M. M., Izvestiya vysshikh uchebnykh zavedeniy - fizika, No. 12, 1970, pp 133-135

acceleration of electrons up to final energy (40 msec), it was concluded that the vertical-angular distribution of the intensity of the components of linear polarization of synchrotron radiation can be studied experimentally on the synchrotron used.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

Nuclear Physics

USSR UDC 621.384.6

VOROB'YEV, A. A., NIKITIN, M. M., and KOZHEVNIKOV, A. V.

"Experimental Study of Linear Polarization of Synchrotron Radiation of High-Energy Electrons"

Moscow, Atomnaya Energiya, Vol 29, No 5, Nov 70, pp 389-391

Abstract: The article continues the authors' study of synchrotron radiation on the Tomsk Polytechnic Institute synchrotron for an energy of 1.5 Gev. The linear polarization of synchrotron radiation was studied according to the method of F. A. KOROLEV, O. F. KULIKOV, and A. S. YAROV. Typical examples of the angular intensity distribution of the polarization components in the vertical plane for various accelerated electron energies are given. There is good agreement between experimental and theoretical results for the σ-component. The angular distribution of the π-component differs from the theoretical and depends on accelerator adjustment. A characteristic peculiarity of the angular distribution of the π-component is the absence of radiation in the direction of instantaneous velocity (tangent to the

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

USSR

VOROB'YEV, A. A., et al., Atomnaya Energiya, Vol 29, No 5, Nov 70, pp 389-391

electron orbit). This is confirmed experimentally; however, in some cases at $\lambda = 4350$ Å the intensity in the minimum of the π-component does not equal zero, though it is very small. Measurements showed good agreement between the intensity distributions of the σ- and π-components of synchrotron radiation linear polarization and theoretical results up to energies of 1 Gev.

The authors thank A. N. DIDENKO and O. F. KULIKOV for their interest and assistance.

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UNCLASSIFIED PROCESSING DATE--20NOV70

1/3 025

TITLE--METHOD OF OBJECTIVE DETERMINATION OF VISUAL ACUITY -U-

AUTHOR--NIKITIN, M.S.

COUNTRY OF INFO--USSR

SOURCE--VOYENNO-MEDITSINSKIY ZHURNAL, NO 3, 1970, PP 73-74

DATE PUBLISHED--------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--MEDICAL EXAMINATION, VISUAL ACUITY, NYSTAGMUS, MEDICAL EQUIPMENT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

STEP NO--UR/0177/70/000/003/0073/0074

PROXY REEL/FRAME--3000/0356

CIRC ACCESSION NO--AP0134147

UNCLASSIFIED

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

UNCLASSIFIED PROCESSING DATE--20NOV70

2/3 025

CIRC ACCESSION NO--AP0134147

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE FURTHER DEVELOPMENT OF THE METHOD OF OBJECTIVE DETERMINATION OF VISUAL ACUITY ON THE PRINCIPLE OF USE OF OPTOKINETIC NYSTAGMUS HAS AROUSED MUCH INTEREST AMONG OPHTHALMOLOGISTS. IN RECENT YEARS MANY WORKS HAVE ALSO APPEARED IN THE SOVIET LITERATURE. THE INITIATOR OF STUDY OF THAT QUESTION IN OUR COUNTRY WAS N. I. SHIBINSKAYA. IN THE DEVELOPMENT OF THAT METHOD SHE TOOK AS A BASIS THE METHOD OF GUNTER IN NICOLAI'S MODIFICATION. IN CONTRAST WITH THE LATTER, N. I. SHIBINSKAYA CONDUCTS THE INVESTIGATION WITH A DISTANCE OF 3 METERS 20 CM (NICOLAI WITH 1 METER 75 CM). OTHER AUTHORS (M. N. OSTROVSKAYA AND M. V. SHILYAYEVA, AND YE. I. FIL'VINSKIY) ALSO ADHERE TO THAT PRINCIPLE. THE OBTAINED VALUES USUALLY ARE COMPARED WITH THE RESULTS OF SUBJECTIVE DETERMINATION OF VISUAL ACUITY. WE HAVE CONSTRUCTED AN INSTALLATION FOR THE OBJECTIVE DETERMINATION OF VISUAL ACUITY ON N. I. SHIBINSKAYA'S PRINCIPLE. BEHIND A SHIELD, IN THE CENTER OF WHICH A WINDOW 10 TIMES 15 CM IN SIZE IS MADE (THE WINDOW OF STIMULUS) A DRUM ROTATED BY MEANS OF A SMALL MOTOR IS INSTALLED. THE DRUM DIAMETER IS 40 CM. ITS HEIGHT IS 12 CM, ITS VELOCITY IS 10 RPM, AND THE ILLUMINATION IS TWO 40 WATT LAMPS. THE DRUM BEARS A BELT ON WHICH OBJECTS IN THE FORM OF SQUARES ARE PLACED MANUALLY. SEVERAL SUCH BELTS ARE MADE AND ON EACH THERE ARE OBJECTS EQUAL IN SIZE TO THE WIDTH OF LETTERS OF LINES 1, 5, 10 OR 12 OF THE SIVTSEV GOLOVIN TABLE. THE BELT IS REPLACED IN EACH SEPARATE CASE. THE WINDOW OF STIMULUS IS AT THE EYE LEVEL OF A SEATED MAN.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

UNCLASSIFIED PROCESSING DATE--20NOV70

3/3 025

CIRC ACCESSION NO--AP0134147

ABSTRACT/EXTRACT--(U) CONCLUSION IT SHOULD BE NOTED THAT INVESTIGATION BY MEANS OF THE NYSTAGMOAPPARATUS TAKES LITTLE TIME AND THE NYSTAGMOID MOVEMENTS OF THE EYES ARE DETERMINED SIMPLY AND RAPIDLY. THIS PERMITS USING THE METHOD OF OBJECTIVE DETERMINATION OF VISUAL ACUITY IN BROAD PRACTICE. HOWEVER, DUE TO THE LARGE PERCENTAGE OF NONCOINCIDENCES WITH SUBJECTIVE DATA IT SHOULD BE USED AS AN AUXILIARY METHOD.

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"APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202220004-7

1/2 019 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--A METHOD FOR THE OBJECTIVE DETERMINATION OF VISUAL ACUITY -U-

AUTHOR--NIKITIN, M.S.

COUNTRY OF INFO--USSR

SOURCE--VOENNO-MEDITSINSKII ZHURNAL, MAR. 1970, P 73-74

DATE PUBLISHED----MAR70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--VISUAL ACUITY, MEDICAL EXAMINATION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1996/0490 STEP NO--UR/0177/70/000/000/0073/0074

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2/2 019 UNCLASSIFIED PROCESSING DATE--23OCT70

CIRC ACCESSION NO--AP0117724

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DESCRIPTION OF A TECHNIQUE FOR DETERMINING THE VISUAL ACUITY WITH THE AID OF A TAPE ROTATING ON A DURN BEHIND A SCREEN WITH A WINDOW. SQUARES MATCHING IN SIZE THE CHARACTERS ON A SIVTSEV GOLOVIN TABLE ARE DRAWN ON THE TAPE IN STAGGERED ROWS. THE READINGS OF A NYSTAGMOGRAPH DURING EXAMINATIONS ARE USED FOR OBTAINING VISUAL ACUITY RATINGS WHEN THE PATIENT'S VISION FOLLOWS THE MOVEMENTS OF STAGGERED SQUARES ON THE TAPE.

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USSR

UDC 599.32:591.52(47+57)

NIKITINA, N. A., Laboratory of Medical Zoology, Institute of Epidemiology and Microbiology, Academy of Medical Sciences USSR, Moscow

"Rodent Migrations in the USSR"

Moscow, Zoologicheskiy Zhurnal, No 3, 1971, pp 408-421

Abstract: Of the 132 rodent species known in the USSR, data have been published on the migrations of only 40 species within their home ranges and on the migrations of 25 species for purposes of settlement or resettlement. The information was obtained largely by observing tagged animals. The results are summarized in a table which indicates the regions where the various species were observed, the average distances covered by the animals, maximum distances travelled by certain species and the time required to do so, and the published sources of the information. The movements of the rodents within their home ranges are usually limited to several dozen meters in the case of small animals and up to 500 to 700 m in the case of large ones. Migrations for purposes of settlement ordinarily do not go beyond 1 km. Migrations covering distances of several dozen kilometers are very rare and confined mostly to squirrels, lemmings, and fur-bearing species during acclimatization and reacclimatization. Species differences in mobility are related to the

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NIKITINA, N. A., Zoologicheskiy Zhurnal, No 3, 1971, pp 408-421

size of the animals, nature of their nutrition, and degree of safety of the habitats. Mobility is markedly affected by geographic and biotopic factors.

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USSR

UDC: 632.954:632.911

SOKOLOV, M. S., IZUBENKO, V. V., MAKEYEVA-GUR'YANOVA, L. T., NIKITIN, N. V., and TEREKHOV, V. I.

"Determining the Absorption of Herbicides by Plants With the Use of Artificial Irrigation"

Moscow, Khimiya v Sel'skom Khozyaystve, no 11, Nov 70, pp 48-52

Abstract: In agricultural practice, rains falling immediately after the treatment of seedings generally necessitate repeated application of herbicides. The effectiveness of systemic herbicides largely depends on their rate of penetration. It also depends on the composition, form, dose of the toxic agent, the development of the plants, their sensitivity to the agent and the characteristics of the cover tissue of the plant. It was found that the rate of penetration of hydrophilic toxic agents and the rain resistance of herbicides can be readily established using

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